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EXAMINER
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CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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11/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/664,818	Applicant(s) GUAY, GORDON G.	
	Examiner Tony Chuo	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Claims 1-26 are currently pending. The previously stated 112 rejections of claims 11, 14, and 23-26 are withdrawn. The amended claims do not overcome the previously stated 102 and 103 rejections. Therefore, claims 1-26 stand rejected under the following 102 and 103 rejections.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 11-15 and 24 are rejected under 35 U.S.C. 102(a) as being anticipated by Deinzer et al (WO 03/043112) using (US 2006/0172171) as an equivalent English translation.

The Deinzer reference discloses a fuel cartridge "1" comprising a housing containing and in direct contact with methanol and having at least a portion of a wall "1b" that is disposed adjacent the fuel egress port "1a" of the cartridge that is comprised of metal; a fuel egress port "1a" supported by the housing; and remaining walls "312" of

the cartridge that are made of elastomer which is thermally insulating (See paragraphs [0064],[0067],[0072] and Figure 3).

Examiner's note: The inner sleeve "312" is construed as being part of the wall of the housing. The limitation "sinking heat generated from external components to enhance a delivery rate of methanol in a vapor phase to the egress port of the container" is construed as intended use. Therefore, this limitation is not given patentable weight. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10 and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawrence et al (US 2002/0197522) in view of Hirsch et al (US 2004/0209133).

The Lawrence reference discloses a fuel cartridge "39a" that supplies methanol to a direct methanol fuel cell comprising: a canister "92a" formed of anodized aluminum which is a thermally conductive material; a fuel bladder "86a" that is made of a plastic

material which is thermally insulating; an exit port "88a", wherein at least a portion of the canister is disposed adjacent to the exit port (See paragraphs [0060],[0093],[0094]). It also discloses disposing a fuel cartridge "39" into a compartment of a portable electronic device "32" (See paragraph [0060]). It also discloses portable electronic devices such as computer laptops or notebooks (See paragraph [0064]).

Examiner's note: The housing of the fuel cartridge is construed as a two layer structure with one layer that is thermally conducting and the other layer that is thermally insulating. It is inherent that a portable electronic device such as a computer laptop comprises heat generating components. Therefore, since the fuel cartridge is in direct contact with the computer laptop, it would also be in thermal communication with a heat generating component of the portable electronic device because of the close proximity of the components. In addition, it is also inherent that a computer laptop comprises heat dissipating elements such as the CPU. Therefore, the fuel cartridge is disposed adjacent a heat dissipating element of the portable electronic device.

However, Lawrence et al does not expressly teach a surface area enhanced planar vaporization membrane residing in the fuel cartridge. The Hirsch reference discloses a removable fuel cartridge that includes a methanol delivery film that is a pervaporation membrane made of polyurethane that causes liquid methanol in the fuel cartridge to undergo a phase change to a vaporous fuel before it is delivered to the anode of the MEA (See paragraphs [0012],[0050],[0070]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lawrence fuel cartridge to include a surface

area enhanced planar vaporization membrane residing in the fuel cartridge in order to allow for the use of a high concentration fuel while using passive water management capabilities (See paragraph [0012]).

Examiner's note: The Lawrence fuel cartridge as modified by the Hirsch methanol delivery film would inherently permit heat that is generated by the component in the portable electronic device to increase a vapor pressure of the fuel in the housing to cause the fuel to egress from the cartridge as a vapor.

6. Claims 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deinzer et al (WO 03/043112) using (US 2006/0172171) as an equivalent English translation as applied to claim 11 above, and further in view of Lawrence et al (US 2002/0197522). However, Deinzer et al does not expressly teach a fuel cartridge that is configured for a specific electronic device wherein the portion of the wall of the housing of the container is configured to be disposed adjacent a heating dissipating element of the electronic device. The Lawrence reference discloses a fuel cartridge "39" that is configured for a portable electronic device "32" such that the housing of the fuel cartridge is disposed adjacent a heating dissipating element of the electronic device (See paragraph [0060] and Figures 1 and 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Deinzer fuel cartridge for use in a portable electronic device such that the portion of the wall of the housing of the fuel cartridge is disposed adjacent a heating dissipating element of the electronic device in order to more efficiently utilize the fuel cartridge as a heat sink for a portable electronic device.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deinzer et al (WO 03/043112) using (US 2006/0172171) as an equivalent English translation as applied to claim 11 above, and further in view of Hirsch et al (US 2004/0209133). However, Deinzer et al does not expressly teach a surface area enhanced planar vaporization membrane residing in the container. The Hirsch reference discloses a removable fuel cartridge that includes a methanol delivery film that is a pervaporation membrane made of polyurethane that causes liquid methanol in the fuel cartridge to undergo a phase change to a vaporous fuel before it is delivered to the anode of the MEA (See paragraphs [0012],[0050],[0070]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Deinzer fuel cartridge to include a surface area enhanced planar vaporization membrane residing in the fuel cartridge in order to allow for the use of a high concentration fuel while using passive water management capabilities (See paragraph [0012]).

### ***Response to Arguments***

8. Applicant's arguments filed 9/25/07 have been fully considered but they are not persuasive.

The applicant argues that Deinzer does not disclose the same structure as claimed by the applicant because it does not disclose a "housing containing and in direct contact with a liquid source of an oxidizable fuel". The examiner disagrees because as clearly shown in Figure 3 of Deinzer, the portion of the housing "1b" that forms the egress port is in direct contact with the methanol fuel.

The applicant also argues that the limitation "sinking heat generated from external components to enhance a delivery rate of methanol in a vapor phase to the egress port of the container" is not a statement of mere intended use, but along with the feature "housing containing and in direct contact with a liquid source of an oxidizable fuel" provides structural differences over Deinzer since the inner sleeve 312 prohibits this arrangement. The examiner would like to point out that the part of the housing that supports the egress port "1a" is not insulated by the inner sleeve "312" as shown in Figure 3. Therefore, the inner sleeve does not prohibit the housing from sinking heat generated from external components to enhance a delivery rate of the liquid source of oxidizable fuel in a vapor phase to the egress port of the container. Therefore, the examiner maintains the assertion that the limitation "sinking heat generated from external components to enhance a delivery rate of methanol in a vapor phase to the egress port of the container" is a recitation of intended use because the structure taught by Deinzer et al is capable of performing the intended use.

The applicant also argues that neither Lawrence nor Hirsh whether taken separately or in combination describe or suggest claim 1 because Hirsch does not suggest that MDF is a surface area enhanced planar vaporization membrane. The examiner disagrees because by definition a surface area enhanced planar vaporization membrane is just a membrane that enhances the rate of delivery of liquid fuel in a vapor state to the fuel cells. The Hirsch reference discloses a methanol delivery film that is a pervaporation membrane that causes liquid methanol in the fuel cartridge to undergo a phase change to a vaporous fuel before it is delivered to the anode of the MEA.



Therefore, the methanol delivery film taught by Hirsch is essentially a surface area enhanced planar vaporization membrane.

The applicant also argues that Lawrence teaches that the exit port is supported on the expandable fuel bladder, not the housing, as called for in claim 1. Although the exit port "88" appears to be attached to the expandable fuel bladder in some of the figures, it is also supported by the housing "92" as shown in Figure 3.

The applicant also argues that the teachings of Lawrence do not suggest a fuel cartridge that is configured for a portable electronic device such that the housing of the fuel cartridge is disposed adjacent a heat dissipating element of the electronic device. The examiner disagrees because Lawrence et al teaches a portable electronic device such as a computer laptop (see paragraph [0064]). Since it is inherent that a computer laptop comprises heat dissipating elements such as a CPU, the fuel cartridge is construed as being disposed adjacent (or near) a heat dissipating element of the portable electronic device.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 7:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

  
JONATHAN CREPEAU  
PRIMARY EXAMINER